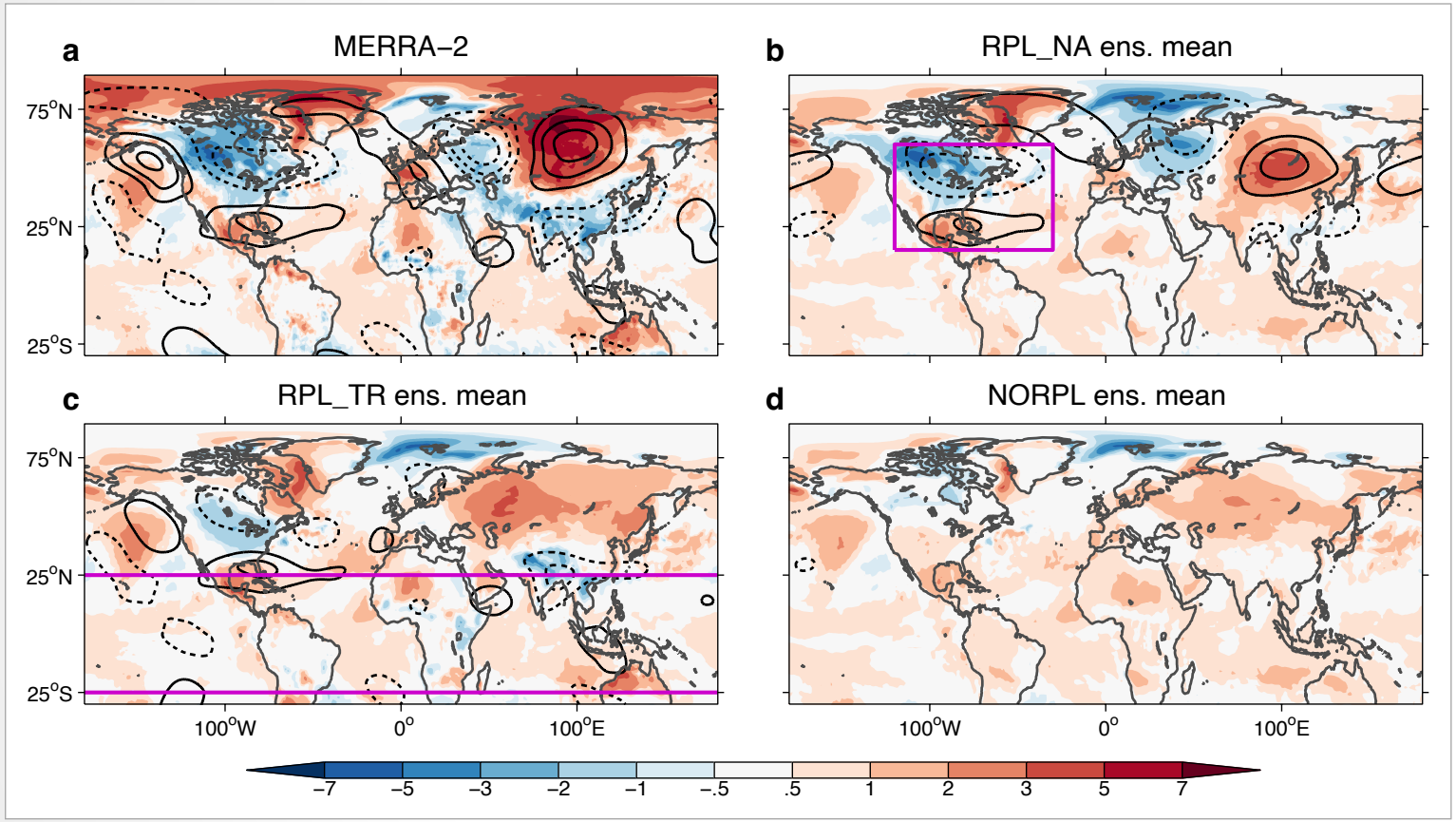
Dynamical Drivers of the Exceptional Warmth Over Siberia During the Spring of 2020



April 2020 anomalies *in 2-m air temperature (color fills, K) and 250mb eddy stream function (contours drawn every 5*10⁶ m²/s) for (a) MERRA-2 and large-ensemble GEOS5 AGCM simulations with (b) regional replay applied near North America (magenta box; RPL_NA), (c) replay applied over the tropics (RPL_TR), (d) and no replay (NORPL).*

The extreme Siberian warmth can be attributed to persistent atmospheric ridging over northern Asia associated with Rossby wave trains originating from the North Atlantic (cf. panels a and b).

A tropical-extratropical teleconnection through which above average tropical SSTs affected the upper-troposphere dynamics and mean meridional circulation, causing warming over the mid-high latitudes (panels c and d).